

Amendments to the Claims

Please cancel claims 921-978 without prejudice.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1-410 (Cancelled)

411. (Previously presented): A method of assessing a state of human heart tissue, comprising:
 providing to a computer system a plurality of images of heart tissue, wherein at least one of the images comprises the heart in a substantially expanded condition, and wherein at least one of the images comprises the heart in a substantially contracted condition;
 creating a model of at least a portion of a wall of a left ventricle of the heart using the computer system, wherein the model comprises the left ventricle in at least an end-systolic state and an end-diastolic state;
 assessing a movement of one or more parts of the wall model between the end-systolic state and the end-diastolic state;
 assessing a transmurality of one or more parts of the wall model;
 comparing the movement to the transmurality to assess a ratio of recoverable heart tissue versus nonrecoverable heart tissue; and
 comparing the ratio to a predetermined number to assess a state of the heart and an optimal treatment of the heart.

412. (Previously presented): The method of claim 411, wherein the predetermined number comprises an average of a plurality of normal hearts.

413. (Original): The method of claim 411, further comprising displaying the state of the heart visually within the model.

414. (Original): The method of claim 411, further comprising displaying the state of the heart visually within the model using a color gradient.

415. (Previously presented): The method of claim 411, further comprising matching at least one part of the wall of the model in the end-systolic state with a corresponding part of the wall of the model in the end-diastolic state.

416. (Previously presented): The method of claim 411, further comprising matching at least one part of the wall of the model in the end-systolic state with a corresponding part of the wall of the model in the end-diastolic state using one or more normals associated with the parts.

417-421 (Cancelled)

422. (Previously presented): The method of claim 411, further comprising determining a number of parts in which the movement of each part is greater than a range from the predetermined number.

423. (Previously presented): The method of claim 411, further comprising:
determining a number of parts in which the movement of each part is greater than a range from the predetermined number; and

dividing the number of parts by a total number of parts.

424-888 (Cancelled)

889. (Previously presented): The method of claim 411, wherein the assessed movement comprises movement towards a centerline of the heart.

890. (Previously presented): The method of claim 411, wherein the assessed movement comprises wall thickness variation.

891. (Previously presented): The method of claim 411, wherein at least one part with assessed movement comprises a point in the wall.

892. (Previously presented): The method of claim 411, wherein at least one part with assessed movement comprises a plurality of points in the wall.

893. (Previously presented): The method of claim 411, further comprising displaying the state of the heart visually with a plurality of colors, wherein the colors represent kinetic properties of at least one part.

894. (Previously presented): The method of claim 411, further comprising displaying the state of the heart visually with a plurality of colors, wherein each of the colors represent different kinetic properties.

895. (Previously presented): The method of claim 411, further comprising assessing kinetics of at least a portion of the heart tissue.

896. (Previously presented): The method of claim 895, further comprising identifying hyper-kinetic tissue from the assessed kinetics.

897. (Previously presented): The method of claim 895, further comprising identifying hyper-kinetic tissue from the assessed kinetics, wherein hyper-kinetic tissue comprises tissue with movement of two or more standard deviations greater than the predetermined number.

898. (Previously presented): The method of claim 895, further comprising identifying akinetic tissue from the assessed kinetics.

899. (Previously presented): The method of claim 898, further comprising assessing tissue suitable for revascularization, wherein tissue suitable for revascularization comprises viable, akinetic tissue.

900. (Previously presented): The method of claim 898, further comprising assessing tissue suitable for revascularization, wherein tissue suitable for revascularization comprises viable, akinetic tissue with an akinetic area greater than a predetermined akinetic area.

901. (Previously presented): The method of claim 898, further comprising assessing tissue suitable for revascularization, wherein tissue suitable for revascularization comprises viable, akinetic tissue with a non-viable area less than a predetermined non-viable area, wherein the non-viable area is assessed from the plurality of images.

902. (Previously presented): The method of claim 898, further comprising assessing tissue suitable for revascularization, wherein tissue suitable for revascularization comprises viable,

akinetic tissue with an akinetic area greater than a predetermined akinetic area and akinetic tissue with a non-viable area less than a predetermined non-viable area, wherein the non-viable area is assessed from the plurality of images.

903. (Previously presented): The method of claim 895, further comprising identifying akinetic tissue from the assessed kinetics, wherein akinetic tissue comprises tissue with movement of two or more standard deviations less than the predetermined number.

904. (Previously presented): The method of claim 895, further comprising identifying normal tissue from the assessed kinetics.

905. (Previously presented): The method of claim 895, further comprising identifying normal tissue from the assessed kinetics, wherein normal tissue comprises tissue with movement that deviates in an amount that is from zero to about two standard deviations from the predetermined number.

906. (Previously presented): The method of claim 895, further comprising identifying diskinetic tissue from the assessed kinetics.

907. (Previously presented): The method of claim 895, further comprising identifying diskinetic tissue from the assessed kinetics, wherein diskinetic tissue comprises tissue with movement away from a centerline of the heart.

908. (Previously presented): The method of claim 411, wherein the model comprises a three-dimensional model.

909. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises at least a predetermined amount of non-viable tissue area, and wherein the non-viable tissue area is assessed from the plurality of images.

910. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises at least a predetermined amount of non-viable tissue volume, and wherein the non-viable tissue volume is assessed from the plurality of images.

911. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises at least a predetermined amount of non-viable tissue mass, and wherein the non-viable tissue mass is assessed from the plurality of images.

912. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises at least a predetermined amount of non-viable tissue and at least a predetermined amount of akinetic tissue.

913. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises at least a predetermined amount of non-viable tissue and at least a predetermined end diastolic volume.

914. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises at least a predetermined amount of non-viable tissue and at least a predetermined transmurality.

915. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises an ejection fraction less than a predetermined ejection fraction.

916. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for ventricular reconstruction, wherein the heart is a potential candidate for ventricular reconstruction if the heart comprises an ejection fraction less than about 35%.

917. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for mitral valve repair, wherein the heart is a potential candidate for mitral valve repair if the heart comprises at least a selected papillary muscle distance, at least a selected papillary muscle angle, and at least a selected amount of mitral regurgitation.

918. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for mitral valve repair, wherein the heart is a potential candidate for mitral valve repair if the heart comprises at least a selected papillary muscle distance.

919. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for mitral valve repair, wherein the heart is a potential candidate for mitral valve repair if the heart comprises at least a selected papillary muscle angle.

First Named Inventor: Mitta Suresh
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920. (Previously presented): The method of claim 411, further comprising assessing if a heart is a potential candidate for mitral valve repair, wherein the heart is a potential candidate for mitral valve repair if the heart comprises at least a selected amount of mitral regurgitation.

921-978 (Cancelled)